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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ALAM, SHAHID AL	
ART UNIT	**PAPER NUMBER**
2162	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/994,529	STERLING ET AL.	
	Examiner	Art Unit	
	Shahid Al Alam	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *RCE May 18, 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on May 18, 2005 have been fully considered and are persuasive. However, upon further consideration, a new ground(s) of rejection is made.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 – 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 1, the phrase "A database system" renders the claim indefinite because it is unclear whether this system is a manual system, a kind of electrical or electronic system and/or a computer system.

As to claims 25 and 31, the phrase "A method for implementing a case-based reasoning system" renders the claim indefinite because it is unclear whether this system is a manual system, a kind of electrical or electronic system and/or a computer system.

As to claim 30, the phrase " A method for implementing a case-based reasoning database function" renders the claim indefinite because it is unclear whether this method is a manual method or a computer implemented method.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 – 31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

MPEP 2106 IV.B.2.(b) A claim that requires one or more acts to be performed defines a process. However, not all processes are statutory under 35 U.S.C. 101. Schrader, 22 F.3d at 296, 30 USPQ2d at 1460. To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan, or (B) be limited to a practical application within the technological arts.

MPEP 2106.II.A A process that consists solely of the manipulation of an abstract idea is not concrete or tangible. See In re Warmerdam, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994).

Claims 1, 25, 30 and 31 in view of the above cited MPEP sections, are not statutory because they merely recite a number of computing steps without producing any tangible result and/or being limited to a practical application within the technological arts. **The use of a computer has not been indicated.**

This claim does not indicate use of hardware on which the software runs to perform the steps recited in the body of the claim. Software or program can be stored on a medium and/or executed by a computer. In other words the software must be *computer-readable.* **The use of a computer is not evident in the claim.** MPEP 2106.IV.B.1(a) refers to "computer-readable" medium with computer program encoded on it."

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 12, 25 and 29 – 32 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant's Admitted Prior Art (hereinafter "APA"; see Background, para [0001 and 0002] and Figures 1 and 2).

With respect to claim 1, APA teaches a database system (see Figure 2), including:

an exemplar object within the database configured to accept and store a plurality of exemplar cases, where the exemplar cases each comprise a known problem and a corresponding solution (see Figures 1 and 2 and para [0001 and 0002]);

a target object within the database configured to accept and store a target case, where the target case comprises a actual problem (see Figures 1 and 2 and para [0001 and 0002]); and

a comparison object within the database for comparing the target case with the plurality of exemplar cases (see Figure 1 and para [0001]).

As to claim 12, the target case includes a target feature; and the exemplar case includes an exemplar feature (see para [0001], lines 3 – 5).

The subject matter of claims 25 and 30 are rejected in the analysis above in claim 1 and therefore, these claims are rejected on that basis.

As to claim 29, determining which of the exemplar cases best matches the target case (see para [0002], lines 15 – 17).

With respect to claim 31, APA teaches a method for implementing a case-based reasoning system (see para [0001], line 1), including:

accepting information representing a target case, where the target case comprises an actual problem (see Figures 1 and 2 and corresponding paragraphs and lines);

accepting weights to apply to a set of respective similarity metrics ([0001], lines 6 – 8);

accepting the number of closest matching exemplar cases the user wants to review, where the exemplar cases each comprise a known problem and a corresponding solution (see Figures 1 and 2 and corresponding paragraphs and lines);

formulating and executing, within the database, a comparison between the target case and the exemplar cases yielding the similarity metrics for the exemplar cases (see Figures 1 and 2 and corresponding paragraphs and lines);

deriving an overall match factor for each of the exemplar cases from the similarity metrics, weighed by the weights ([0002], lines 15 – 18); and reporting one or more of the closest matching exemplar cases (Figure 2 – Result).

The subject matter of claim 32 is rejected in the analysis above in claim 1 and therefore, this claim is rejected on that basis.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2 – 9 and 26 – 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA as applied to claim 1 above, and further in view of U. S. Patent Number 5,864,870 issued to Randal Guck (hereinafter "Guck").

With respect to claims 2 – 9, APA discloses all the limitations of Claim 1. However, APA does not explicitly disclose object includes an attribute of a schema and object includes a macro as claimed.

Guck discloses claimed object includes an attribute of a schema and object includes a macro. Guck further discloses the application of an Object Relation Database to retrieve multimedia files with differing file formats (Guck: Abstract).

Furthermore, Guck discloses using a "virtual file class" as an exemplar class for instances of concrete file classes (Guck: col. 6, lines. 44-67).

As to claim 2, the exemplar object includes an attribute of a schema; and the comparison object includes a method of the schema (Guck: col. 4, lines. 15-40; col. 6, lines. 13-30 – note that the attribute, schema, and method are supported by the Object Relational Database of Guck).

As to claim 3, the schema includes a user-defined type (Guck: col. 6, lines. 13-30 – note that in Object Relational Databases, such as that of Guck, support user defined types).

As to claim 4, the user-defined type is implemented using an object relational database (Guck: col. 6, lines. 13-30 – note that in Object Relational Databases, such as that of Guck, support user defined types).

As to claim 5, the target object includes an attribute of a schema (Guck: col. 4, lines. 15-40; col. 6, lines. 13-30 – note that attributes are supported by the Object Relational Database of Guck).

As to claim 6, the schema includes a user-defined type (Guck: col. 6, lines. 13-30 – note that in Object Relational Databases, such as that of Guck, support user defined types).

As to claim 7, the user-defined type is implemented using an object relational database (Guck: col. 6, lines. 13-30 – note that in Object Relational Databases, such as that of Guck, support user defined types).

As to claim 8, the exemplar object includes a database table; and the target object includes a database table (see APA para [0002] and Guck: col. 6, lines. 13-30 – note that in Object Relational Databases, such as that of Guck, objects are stored in database tables).

As to claim 9, the comparison object includes a macro (Guck: col. 6, lines. 13-30 – note that in Object Relational Databases, such as that of Guck, support macros).

As to claim 26, comparing includes not spawning a process external to the database (Guck: col. 6, lines. 13-30 – note that in the Guck the comparing is an internal function of the Object Relational Database and see also APA Figures 1 and 2).

As to claim 27, comparing includes not running an external program (Guck: col. 6, lines. 13-30 – note that in the Guck the comparing is an internal function of the Object Relational Database and see also APA Figures 1 and 2).

As to claim 28, comparing includes using a user-defined function of the database (Guck: col. 6, lines. 13-30 – note that the Object Relational Database of Guck supports user defined functions and see also APA Figures 1 and 2).

It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to combine APA with Guck to provide an object database schema that mimics a file system, thereby creating a virtual file system that employs the full categorization technique used by the MIME standard and to provide a method for driving a database that solves the problem of transforming incoming files into objects for storage in the database and organizing the transformed files into a hierarchy of objects

in accordance with the type and content of such incoming files for storage in the database (Guck: column 1, lines 60 – 65 and column 2, lines 3 – 6).

6. Claims 10 and 15 – 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA as applied to claim 1 above, and further in view of U.S. Patent Number 6,285,995 issued to Mohammed S. Abdel-Mottaleb et al. (hereinafter "Abdel-Mottaleb").

With respect to claim 10 and 15 - 24, APA discloses all the limitations of Claim 1. However, APA does not explicitly disclose the exemplar case may be a member of domain and the comparison object includes a user defined function as claimed.

Abdel-Mottaleb discloses claimed exemplar case may be a member of domain and the comparison object includes a user defined function.

As to claim 10, a means of grouping exemplar cases into domains, where the exemplar case may be a member of more than one domain (APA teaches in Figure 1, in particularly see Domain N and Abdel-Mottaleb: col. 11, lines. 39-41 – note that Abdel-Mottaleb supports "subclusters" which means that an item can be grouped into a subcluster and additionally with a parent cluster; further note that clusters and subclusters read on domains).

As to claim 15, the comparison object includes a user defined function (Guck: col. 6, lines. 13-30 – note that in Object Relational Databases, such as that of Guck '870, support user defined functions).

As to claim 16, the user-defined function calculates a similarity metric representing the similarity between the target feature and the exemplar feature (Abdel-Mottaleb: col. 6, lines. 7-15 – further note that Abdel-Mottaleb recites alternative similarity measures from col. 6 through col. 9 and see also APA [0002], lines 15 – 18).

As to claim 17, the user-defined function performs mathematical operations to determine the similarity metric (Abdel-Mottaleb: col. 6, lines. 7-15 – further note that Abdel-Mottaleb recites alternative similarity measures from col. 6 through col. 9, all of which involve mathematical operations).

As to claim 18, the user defined function, in calculating the similarity metric, determines the relationships between nodes representing the target feature and the exemplar feature in a hierarchical structure (Abdel-Mottaleb: col. 8, lines. 17-56 – Abdel-Mottaleb recites support for image regions which read on comparison of noted representing the target feature and the exemplar feature; further note that Abdel-Mottaleb discloses the tree structure and hierarchical clustering column 9, lines 41 – 54 and column 11, lines 34 – 39).

As to claim 19, the target case includes a plurality of target features and each exemplar case includes a corresponding plurality of exemplar features; and the user defined function compares the target case with each of the exemplar cases, and determines an overall match factor for each comparison (APA, para [0001] and Abdel-Mottaleb: col. 8, lines. 17-56 –Abdel-Mottaleb recites support for image regions which read on comparison of features).

As to claim 20, the user defined function determines the overall match factor by computing similarity metrics by comparing each target feature in the target case with the corresponding exemplar feature in an exemplar case; and summing the similarity metrics (Abdel-Mottaleb: col. 8, lines. 17-45 and col. 8, lines. 46-56; – Abdel-Mottaleb recites support for image regions and additionally combines the region similarities and see also APA, para [0001 and 0002]).

As to claim 21, the user defined function determines the similarity metrics by comparing each target feature in the target case with the corresponding exemplar feature in the exemplar case; the user defined function creates a weighted similarity metric by multiplying the similarity metrics by a weight associated with that similarity metric; the user defined function determines the overall match factor by summing the weighted similarity metrics (Abdel-Mottaleb: col. 8, lines. 17-45 and col. 8, lines. 46-56; – Abdel-Mottaleb recites support for image regions and additionally combines the region similarities; further note that taking the median of the Kullback informational divergence reads on a statistic weight and see also APA, degree of matching equates weights).

As to claim 22, the user-defined function indirectly recognizes the similarity between the target and exemplar case (Abdel-Mottaleb: col. 6, lines. 7-15 – further note that Abdel-Mottaleb recites alternative similarity measures from col. 6 through col. 9).

As to claim 23, the user defined function is aware of features which are indicative of a finding; and the user defined function will recognize that the target case possesses the feature indicative of the finding exemplified by the exemplar case, even when the

exemplar case lacks that feature (Abdel-Mottaleb: col. 8, lines. 17-56 –Abdel-Mottaleb recites support for image regions which read on comparison of features).

As to claim 24, the user defined function is aware of features, the lack of which are indicative of a finding; and the user defined function will recognize that the target case lacks a feature, the lack of which is indicative of the finding exemplified by the exemplar case, even when the exemplar case possesses that feature (Abdel-Mottaleb: col. 8, lines. 17-56 –Abdel-Mottaleb '995 recites support for image regions which read on comparison of features, further note that different images may not have corresponding regions).

It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to combine APA with Abdel-Mottaleb to provide a method for organizing images in a database, which resulting database allows to find images that are similar with a given query image in a reduced time (Abdel-Mottatleb: column 3, lines 4 – 7).

7. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA and in view of U.S. Patent Number 5,893,095 issued to Ramesh Jain et al. (hereinafter "Jain").

With respect to claim 13 and 14, APA discloses all the limitations of Claim 1.

However, APA does not explicitly disclose a user interface allowing population of the target feature and the exemplar feature as claimed.

Jain discloses claimed user interface allowing population of the target feature and the exemplar feature (Jain: see abstract, Figure 7 and column 20, lines 48 – 59).

It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to combine APA with Jain to provide a way to compare images represented by different schemas and to reduce the time performing the comparison, especially when large numbers of images are in the database (Jain: column 3, lines 53 – 56).

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA and in view of Abdel-Mottaleb and further in view of U.S. Patent Number 5,893,095 issued to Ramesh Jain et al. (hereinafter "Jain").

With respect to claim 11, APA teaches in Figure 1, in particularly Domain N and Abdel-Mottaleb discloses in col. 11, lines. 39-41 that "subclusters" which means that an item can be grouped into a subcluster and additionally with a parent cluster; further note that clusters and subclusters read on domains. However, APA and Abdel-Mottaleb do not explicitly disclose a user interface allowing the pruning as claimed.

Abdel-Mottaleb discloses a user interface allowing the pruning of domains to exclude from comparison with the target case (col. 15, lines. 4-5; col. 2, lines. 13-14 – note that selection means for selecting a cluster reads on pruning domains).

Jain discloses claimed user interface allowing pruning (Jain: see abstract, Figure 7 and column 20, lines 48 – 59).

It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to combine APA and Abdel-Mottaleb with Jain to provide a way to compare images represented by different schemas and to reduce the time performing the comparison, especially when large numbers of images are in the database (Jain: column 3, lines 53 – 56).

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shahid Al Alam whose telephone number is (571) 272-4030. The examiner can normally be reached on Monday-Thursday 8:00 A.M.- 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shahid Al Alam
Primary Examiner
Art Unit 2162

7 August 2005